

4/9/2020

## COVID-19 Plant Monitoring Requirements

In response to the COVID-19 pandemic while following the requirement of the Governor's directives for social distancing and non-contact procedures, MnDOT is releasing the following guidance for our projects as it pertains to Agency plant monitoring of bituminous and concrete QC activities, sampling and testing for any and all materials. The definition of social distancing is new and continues to undergo changes. Contractor and Agency personnel are responsible to stay up to date and establish proper conformance on a project by project basis.

### Background

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In accordance with MnDOT Specification 1511, *Inspection of Work*, and 1604, *Plant Inspection – Commercial Facility*, "The Engineer may inspect Materials and the Work." Contract specifications for sampling and testing as outlined in the Schedule of Materials Control still apply to all projects.

### Medical Screening Requests

Reference MnDOT Fact Sheet regarding COVID-19 Medical Screening Requests from Third Parties, dated 4/2/2020.

### Independent Assurance Review and Samples

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MnDOT will perform all IA activities when social distancing and non-contact procedures can be observed. This likely means that tests performed outside a lab will continue as per normal procedures. IA activities that cannot be performed observing current limitations will be documented as MISSED. It is anticipated that the MISSED activities are those that are done in close quarters of a small field lab.

If, in the future, social distancing and non-contact procedures are modified, this recommendation will be revisited. By July 1, 2020, the results and accumulated MISSED reviews will be considered to determine if adjustments can be made or if procedures to make up for the MISSED reviews need to be established.

The Department's policy is to administer IA to all State projects and Federally Funded local projects. Please prioritize IA for Federally Funded projects on the National Highway system as per the Code of Federal regulations.

## Bituminous Plant Certification and Monitoring

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### Bituminous Plant Certification:

Proceed with Bituminous Plant Certification while employing social distancing. Allow for real time photographs sent directly to inspector in areas of the plant that do not allow for social distancing.

If social distancing is not possible then the Contractor will need to document all aspects required on the plant certification form with either attached electronics documentation (ex. Scale calibrations) or send pictures (Ex. sieves, ovens, computers, printers, all testing equipment, calibration documentation, etc). A live stream video feed would be required for AC pump calibration and belt calibrations. This would include pictures of span values.

### Bituminous Sampling and Splitting of Mixture:

The agency representative needs to observe the Contractor sampling and splitting of all mixture samples. If social distancing can't be maintained in the laboratory while splitting the sample, perform the split on a sheet of plywood/steel outside the laboratory.

Verification samples are to be taken at a random time and place designated by the Agency. This sample will be tested by the Agency with the contractor using their split for QC.

It has been our practice to have Plant Monitors observe at least one QC test per day. It is an excellent practice that should continue to the best of our abilities. The Schedule of Materials control only references the need for the Agency personnel to sign under remarks if the test was observed.

### From the SMC:

**“Note #1** All QA test samples shall be from split samples.

If a member of the monitoring team observes the Contractor Test, note and sign under remarks.”

When the ability to observe QC testing is limited, increase the number of verification samples based upon the following:

|                                    |  |
|------------------------------------|--|
| Production < 2000 tons             | take and test one verification sample    |
| Production < 2000 tons < 4000 tons | take and test two verification samples   |
| Production > 4000 tons             | take and test three verification samples |

### Sampling

1. Sampling Behind the Paver - Use standard procedures while maintaining safe social distance.
2. Truck Box Sampling – Use standard truck box sampling procedures and while maintaining safe social distance. If plant monitor is not at the plant site, the sample will need to be taken behind the paver with the street inspector monitoring the sampling.

### Bituminous Plant Monitoring:

1. Preference for continuing current duties while practicing social distancing

2. If normal duties cannot be maintained:
  - a. Closely monitor stockpiles, loader operation and proper bin management including assessing RAP piles for unacceptable contamination.
  - b. Require immediate relay of Contractor test data electronically.
    - i. Pay special attention to Contractor's reported sieving efficiency (target < 15).
    - ii. Monitor differences in max mix gravity and asphalt content between agency and contractor.
  - c. If Contractor test results appear to have bias, increase verification sampling such that statistical differences can be more closely determined.
3. The Contractor can set up a series of agency approved live stream cameras for documenting in real-time weights and procedures without an agency monitor present. Camera positions would require viewing of the scale and of the water bath. The agency will be monitoring the washing efficiency of the gradation to make sure samples are clean.

### **Bituminous Core Testing:**

1. Consider using Mat Density Cores (Optional Department Only Core Testing) [2360.3.D.3] if space, personnel, and equipment allow. This decrease the number of cores by 50%. By specification the Contractor requests this option, but would be a discussion topic at the pre-con meeting for consideration.
2. If possible use standard procedures with safe social distancing.
3. Adopt the practice of testing all companions (Metro has done this). The individual and average tolerances will eliminate most testing bias. This can be achieved using a combination of field and District lab facilities. These results need to be timely, but not immediate.
4. Use a series of live stream cameras for documenting in real-time weights and procedures without an agency monitor present. Camera positions would require viewing of the scale and of the water bath and agency approved.

### **AC/Emulsion Samples:**

#### AC/Emulsion Samples

Use standard procedures as much as possible while maintaining safe social distancing.

### **Questions:**

If you have any questions please contact:

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## Concrete Plant Certification and Monitoring

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### Concrete Ready-mix and Concrete Paving Batch Plant Certification:

- Producer/Contractor electronically complete Contact Report. Make sure all cell phone numbers and emails are up to date to allow for proper communication.
- Email Agency representative completed contact report, certificate of compliance, batching scale calibration documentation, QC lab scales and sieve calibration documentation, site map, pictures of stockpile areas and calibrated sieves, copies of Producer/Contractor MnDOT Technician Cert ID cards
  - After plant monitor reviews plant documentation, if they note any significant changes from the previous year, contact the Producer and request the producer interactively through live video streaming show them any areas of concern identified by the monitor.
- Cementitious and Admixture Sampling
  - Agency will provide containers for Producer/Contractor sampling of admixtures and cementitious.
  - If safe sampling and handling of the cementitious and admixture samples and invoices is not feasible, delay sampling until later in the season.

### Sampling & Splitting of Aggregate Samples

- The Schedule of Materials Control for concrete requires sampling and splitting aggregate for testing.
- Contractor/Producer Gradation Samples
  - Ready-Mix – Take QC samples at location identified on Contact Report located at plant
  - Paving - Sampling from the belt is required
- Agency Gradation Samples
  - Ready-Mix – Verification samples can be taken from the stockpile using proper stockpile sampling techniques
  - Paving - Sampling from belt is required, however samples can be taken from the stockpile using proper stockpile sampling techniques
- Agency Quality Samples
  - Samples will be taken from the stockpile using proper stockpile sampling techniques
  - The Agency will retain all failing aggregate quality samples for a period of 14 days to allow the Contractor/Producer to respond to failures.

### Concrete Ready-Mix Plant Monitoring

- Producer will email or text a clear and legible picture of the first Certificate of Compliance after the Producer signs for each mix type, each day to Plant Monitor. A digitally produced (pdf or scanned) Certificate of Compliance would also be acceptable.
- Producer will take a picture of the batching report that corresponds with the first Certificate of Compliance for that day and text or email to Plant Monitor.
- Producer will email QC Workbook, Control Charts and Sampling Logs to Plant Monitor at the end of each day

### Concrete Paving Plant Monitoring

- MnDOT recommends the Contractor provide a separate test trailer for the Plant Monitor with the required testing equipment. If the plant site does not allow for a separate workspace for the Contractor and the Agency, the Contractor and Agency will split testing time in the test trailer with proper cleaning between Contractor and Agency use on a case by case basis.
- Moisture and Microwave Oven testing
  - Contractor

- If using the same trailer, startup testing will be performed either the previous evening or right away in the morning prior to any concrete production and prior to the Plant Monitor entering trailer.
    - Contractor will email or text clear and legible pictures of the 10 batch tickets used for determining the w/c calculation to the Plant Monitor. Digitally produced batch tickets would also be acceptable.
    - Contractor will email or text clear and legible picture of first batch ticket used after moisture adjustments were made to the Plant Monitor.
  - Agency
    - Perform moisture testing and microwave oven testing per the SMC
    - Text the Contractor QC to provide moisture test results for adjusting the batch weights
    - Agency will sample concrete for microwave oven testing from agitator trucks
- Gradation Testing and -200 Testing on the Coarse Aggregate
  - Contractor – If using the same trailer, retain samples and test at the end of the day after the Plant Monitor has completed the final moisture and microwave oven test for the day
  - Agency – Testing performed at the plant can be performed at an alternate location (separate Agency testing location or District lab)
- Spreadsheets and batch tickets
  - Contractor (At the end of each day)
    - Email Plant Monitor completed workbooks and scanned batch tickets
    - Email Plant Monitor all delivery invoices for cementitious and admixtures
    - Email Plant Monitor copy of the concrete ingredients summary
  - Agency – Email Contractor completed workbooks at the end of each day

**Questions:**

If you have any questions please contact:

Ready-Mix:

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